

## W-Project Crash Reduction Information

Countermeasure	Crash Pattern Affected	Percent Reduction		Date Approved
1. New Traffic Signal (two phase)	Angle	65		8/2002
	Left Turn-Cross Traffic	65*		8/2002
	Rearend	-10*		8/2002
2. New Traffic Signal (with protected-permitted left turn phase)	Angle	65		8/2002
	Left Turn-Cross Traffic	65*		8/2002
	Left Turn-Same Road	40		8/2002
	Rearend	-10*		8/2002
3. New Traffic Signal (with protected only left turn phase)	Angle	65		8/2002
	Left Turn-Cross Traffic	65*		8/2002
	Left Turn-Same Road	70		8/2002
	Rearend	-10*		8/2002
4. Closed Loop Signal System	Rearend	20*		8/2002
	Ran Off Road (right and left)	10*		8/2002
5. Strobes	Angle	15*		8/2002
6. Intersection Warning Flasher	Angle	30		8/2002
7. Left Turn Lane at an Intersection	Left Turn-Same Road	50		8/2002
	Rearend	35		8/2002
	Ran Off Road (right and left)	35		8/2002
		<u>1 Approach</u>	<u>Both Approaches</u>	
	3-leg Rural Stop Sign controlled	44		11/2002
	3-leg Urban Stop Sign controlled	33		11/2002
	4-leg Rural Stop Sign controlled	28	48	11/2002
	4-leg Urban Stop Sign controlled	27	47	11/2002
	4-leg Urban Signal controlled	10	19	11/2002
8. Right Turn Lane at an Intersection	Rearend	50		8/2002
		<u>1 Approach</u>	<u>Both Approaches</u>	
	Stop Sign controlled	14	26	11/2002
9. Increase Turn Lane Length	Rearend	15		8/2002
	Ran Off Road (right and left)	15		8/2002
10. Continuous Left Turn Lane	Rearend	30		8/2002
	Left Turn-Same Road	30		8/2002
	Ran Off Road (right and left)	30		8/2002
11. Widening for an Additional Lane	Rearend	10*		8/2002
	Sideswipe	10*		8/2002
12. Pavement Widening		<u>Rural</u>	<u>Urban</u>	
	Rearend	24	17	8/2002
	Head-On	24	17	8/2002
	Sideswipe	24	17	8/2002
13. Widen or Improve Shoulder		<u>Rural</u>	<u>Urban</u>	
	Ran Off Road (right and left)	18	26	8/2002
14. Horizontal Realignment	Ran Off Road (right and left)	43		8/2002
	Head-On	43		8/2002
	Sideswipe	43		8/2002

15. Vertical Realignment	Angle	40	8/2002		
	Rearend	40	8/2002		
	Ran Off Road (right and left)	40	8/2002		
16. Improve Skew Angle	Angle	40	8/2002		
	Left Turns	40	8/2002		
	Rearend	40	8/2002		
	Ran Off Road (right and left)	40	8/2002		
17. New or Upgraded Guardrail	Ran Off Road	<u>Fatal</u> 35	<u>Injury</u> 4	<u>PDO</u> 7	8/2002
18. Bridge Guardrail	Ran Off Road	<u>Fatal</u> 55	<u>Injury</u> 20	<u>PDO</u> -50	8/2002
19. New Median Barrier	Ran Off Road (left)	<u>Fatal</u> 63	<u>Injury</u> 10	<u>PDO</u> -25	8/2002
20. Shoulder Rumble Strips	Ran Off Road (on improved side)		29		8/2002
21. Skid Treatments (overlay)	Ran Off Road (right and left)	<u>Wet</u> 63	<u>Dry</u> 27		8/2002
	Rearend	63	27		8/2002
	Head-On	63	27		8/2002
22. Pedestrian Structure	Pedestrian		85		8/2002
23. Markings & Delineation	Ran Off Road (right and left)		21		8/2002
	Head-On		21		8/2002
	Sideswipe		21		8/2002
24. Warning Signs	Ran Off Road (right and left)	<u>Rural</u> 40	<u>Urban</u> 30		8/2002
	Head-On	40	30		8/2002
	Sideswipe	40	30		8/2002
25. Remove Traffic Signal	Rearend		10		11/2002
26. Limited Movement Crossovers	Angle		75		11/2002
	Left-Turn Different Roadway		75		11/2002
	Left-Turn Same Roadway		75		11/2002
27. Dynamic Message Signs	Rearend		10		11/2002
28. Bridge Replacements	Total Crashes per Year		22		11/2002
	Non-Fatal Injury Crashes per Year		26		11/2002
	Total Injury Crashes per Year		32		11/2002
	PDO Crashes per Year		13		11/2002
29. Concrete Island	Angle		90		3/2004
	Left Turn - Same Road		90		3/2004
	Left Turn - Different Road		90		3/2004
30. Positive Offset for New Left Turn Lanes	Left Turn - Same Road		65		11/2004
	Rear End		35		11/2004
	Ran Off Road		50		11/2004
31. Positive Offset for Existing Left Turn Lanes	Left Turn - Same Road		15		11/2004
	Ran Off Road		15		11/2004
32. Improve Sight Distance Triangles - Remove Objects	Total Crashes		25		2/2005
	Total Injury Crashes		20		2/2005
	Total Fatal Crashes		66		2/2005

<b>33. Increase Distance to Obstacle - Guardrail</b>	Total Crashes	3' - 36	2/2005
		5' - 53	2/2005
		8' - 70	2/2005
		10' - 78	2/2005
<b>34. Roundabout</b>	Total Crashes	38	3/2005
	Total Injuries	76	3/2005
	Total Fatalities	90	3/2005
<b>35. Improve Signal Timing</b>	Total Crashes	15	3/2005
<b>36. Stripe for Left Turn Lane within Existing Roadway</b>	Total Crashes	26	3/2005
	Left Turn Crashes	66	3/2005

**Notes:**

***Please use all crashes of the correctable type occurring at the location unless otherwise noted.***

\* Subjective data agreed upon by the W-Project committee until empirical data is established